

Appendix G – Assessment of Ground Movements

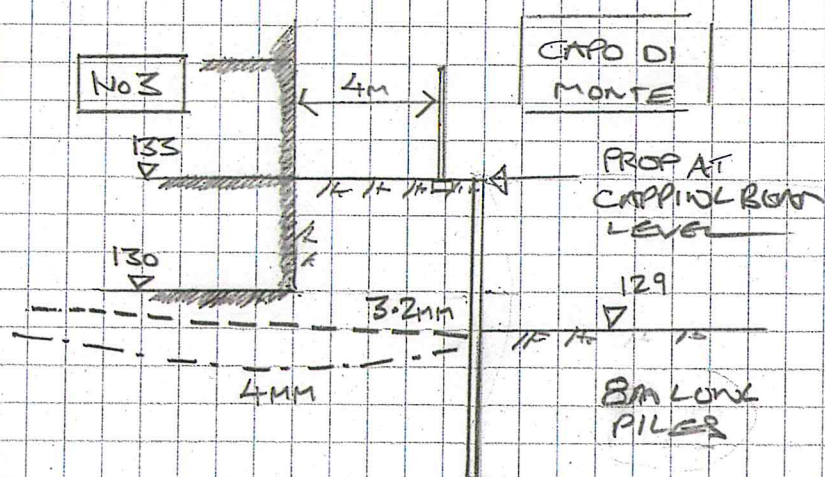
CAPO DI MONTE 6036

01

GROUND MOVEMENT
ASSESSMENT
NO 3 UPPER TENACE

FEB 15

AJB



CIRIA C580 - HIGH SUPPORT STIFFNESS IE TOP-PROP

TABLE 2.2 VERTICAL MOVEMENT = 0.04% WITH DEPTH = 3.2mm -----

HORIZONTAL MOVEMENT = 0.04% WITH DEPTH = 3.2mm

TABLE 2.4 VERTICAL MOVEMENT = 0.1% EXCAVATION = 3.5mm C.G.L. -----

HORIZONTAL MOVEMENT = 0.15% EXCAVATION = 5.3mm C.G.L.

MOVEMENTS PREDICTED AT EXT. BASEMENT

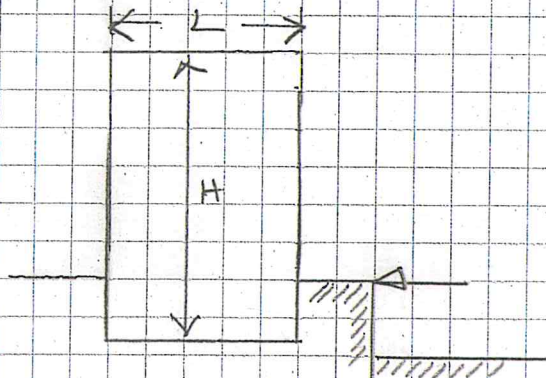
TABLE 2.2 VERTICAL MOVEMENT $(3.2/2 \times 12) \times 20 = 2.8mm$

HORIZONTAL MOVEMENT $(3.2/1.5 \times 12) \times 14 = 2.5mm$

TABLE 2.4 VERTICAL MOVEMENT $= 0.1\% \times 1000 \times \frac{3.5 \times 4000 - 4000}{3.5 \times 4000} = 0.7mm$

HORIZONTAL MOVEMENT $= 0.15\% \times 1000 \times \frac{4 \times 4000 - 4000}{2 \times 4000} = 1.2mm$

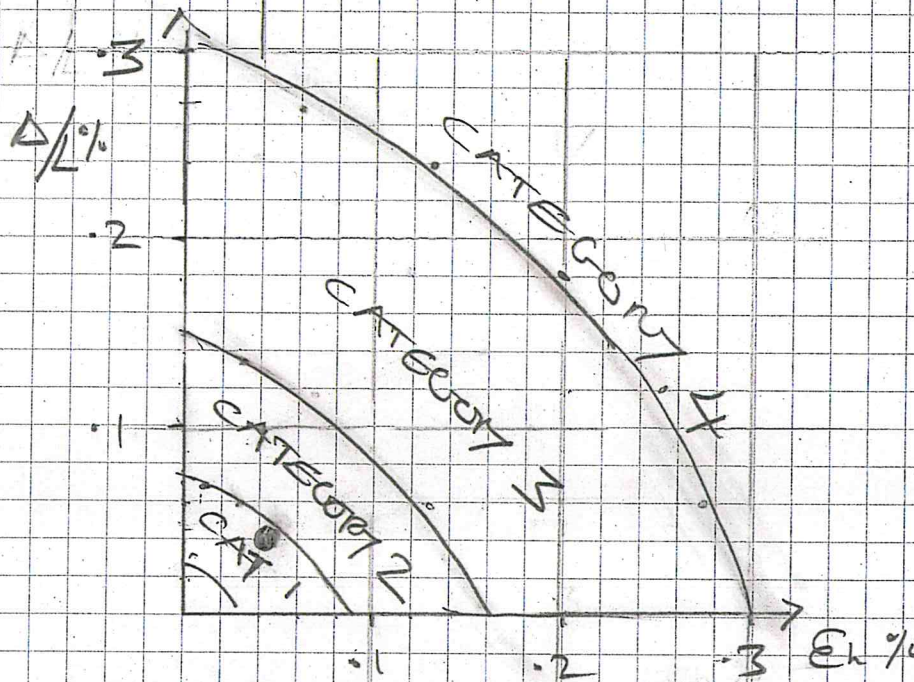
CONSIDER ADJUSTED BUILDING



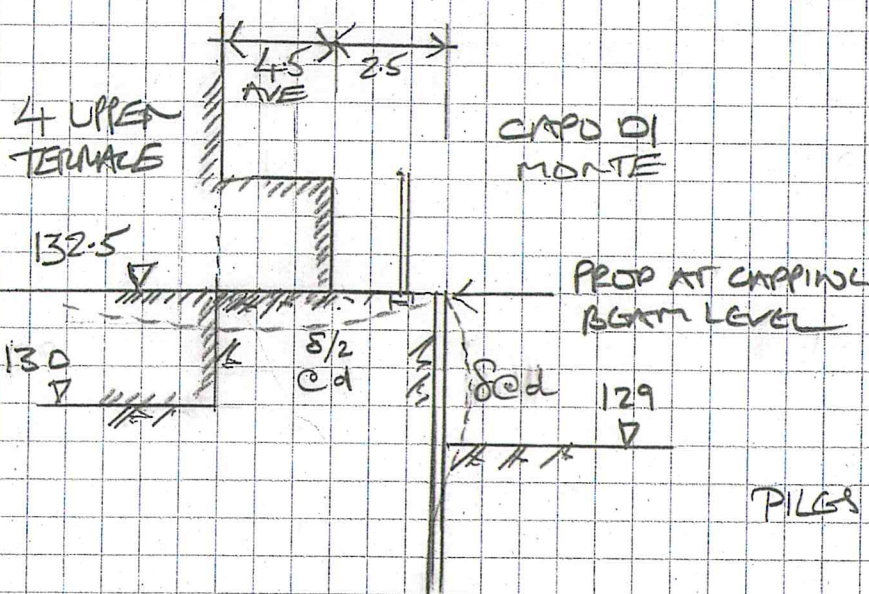
$$L/H = 10/18 = 0.56$$

$$\Delta/L = 35/10000 = 0.035\%$$

$$E_h = 3.7/10000 = 0.037\%$$



PREDICTED DAMAGE CATEGORY CATEGORY 1



NOTE: BOUNDARY LINE
TO BE RETAINED
BY KINLPOTS
IN TEMP COLD

CIRCA CS86 - HIGH SUPPORT STIFFNESS

TABLE 2.2 VERT MOVEMENT = 0.04%. DRAIN J LAM = 3.2mm

HORIZ MOVEMENT = 0.04%. DRAIN J LAM = 3.2mm

TABLE 2.4 VERTICAL MOVEMENT = 0.1%. EXCLN = 3.5mm CGL

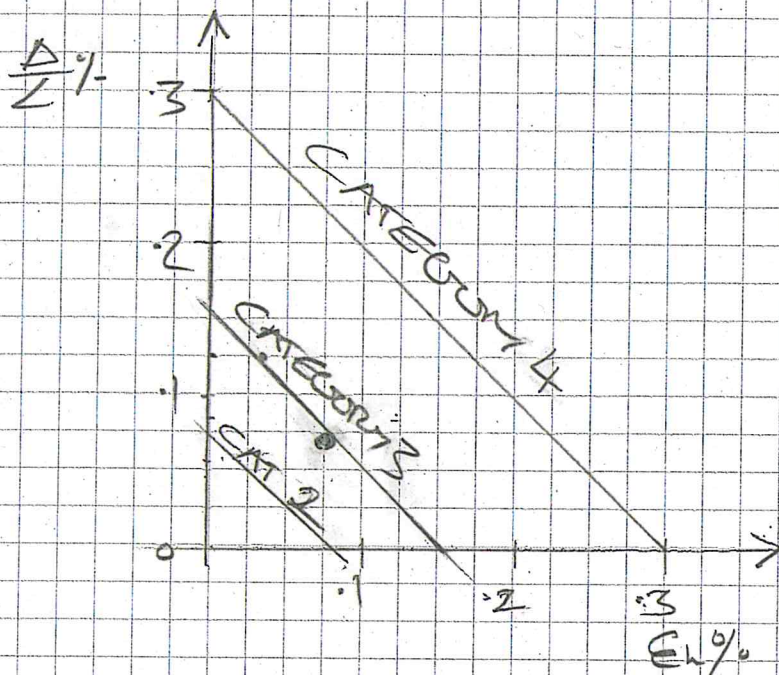
HORIZ MOVEMENT = 0.15%. EXCLN = 5.3mm CGL

FOR CALCULATION:

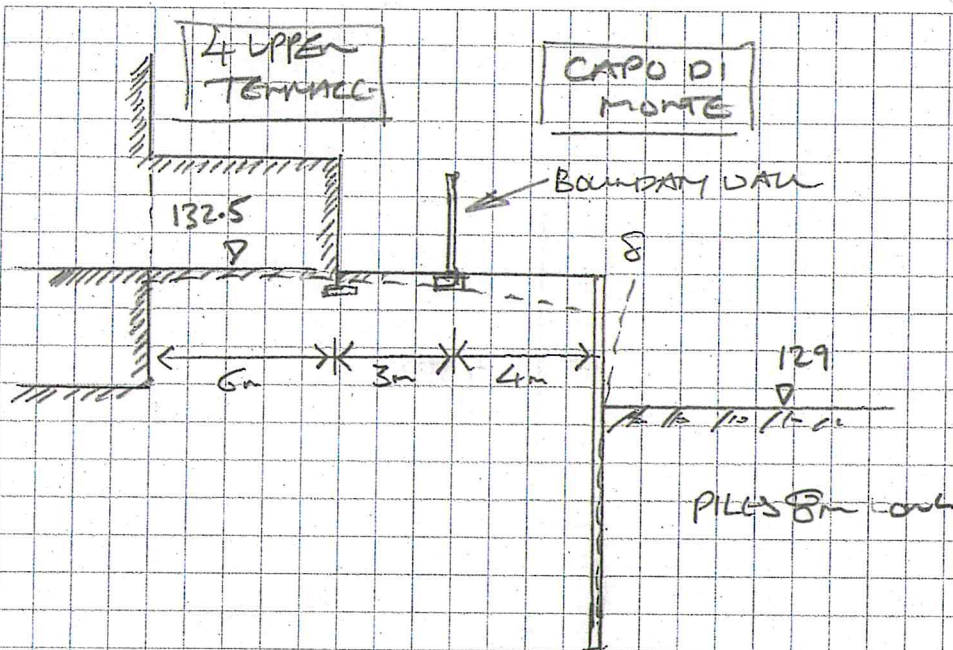
$$L/H = 4500 / 3000 = 1.5$$

$$\Delta/L = 3.4 / 4500 = 0.076\%$$

$$E_L = 4.3 / 4500 = 0.095\%$$



PREDICTED DAMAGE CATEGORY 2



CIMA C580 - LOW SUPPORT STIFFNESS

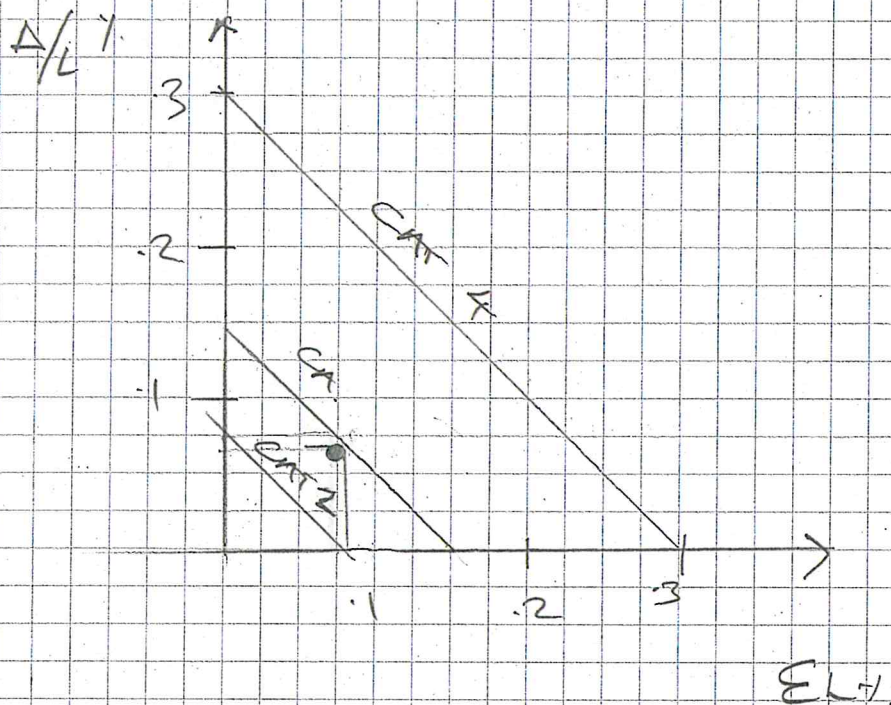
TABLE 2.2 VERT MOVEMENT $\pm 0.04\%$ = 32mmHorizontal movement = 0.04% = 32mmNEGLIGIBLE
@ 2nd.TABLE 2.4 VERT movement = 0.35% = 12mmHorizontal movement = 0.4% = 14mm} AT WALL } NEGLIGIBLE
@ 4th

CONSIDER GROUND WALL

SETTLING of FREE-STANDING Boundary Wall may occur
AT MAXIMUM of UP TO 10mm BUT CONSIDERED NEGLIGIBLE
IMPACT ON FREE-STANDING GROUND WALL

CONSIDER RISK

Vertical movement $\pm 0.9 + 3.2 = 4.1$ mmHorizontal movement $\pm 0.9 + 3.8 = 4.7$ mm $L/H = 6000/4000 = 1.5$ $\Delta/L = 4.1/6000 = 0.068\%$ $E_h = 4.7/6000 = 0.078\%$



PREDICTED DAMAGE WATERLOO 2.